

Countering the Improvised

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U.S. Army engineers prepare to fire an M-58 mine-clearing line charge to rid a new supply route of possible improvised explosive devices (IEDs) in the Maiwand district of Kandahar Province, Afghanistan, in November 2010.

U.S. forces operating in Afghanistan continue to be subjected to frequent and deadly attacks from insurgents using improvised explosive devices (IEDs), mortars and rocket launchers. The

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Explosive Device Threat



Congressional Research Service reported that IEDs have caused 50 percent of all American combat casualties—both killed and wounded—in Afghanistan. The Department of Defense has described IEDs

as the number-one weapon of strategic influence and consequently has dedicated a high level of resources toward countering the impact of IEDs and their use by enemy forces.

To help ensure the roads are safe to travel, a soldier with a counter-IED (C-IED) team moves through an Afghan village in the Pul-e-Alam district of Logar Province.



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DoD Focus Areas and C-IED Initiatives

In February 2006, the Deputy Secretary of Defense created the Joint IED Defeat Organization (JIEDDO), responsible for leading, advocating and coordinating all DoD efforts to defeat IEDs. JIEDDO focuses all DoD actions in support of the efforts of combatant commanders and their respective joint task forces to defeat IEDs as weapons of strategic influence. The organization is directed to identify, assess and fund initiatives that provide specific counter-IED solutions. Currently, the Army remains JIEDDO's executive agent and is responsible for providing primary administrative support.

DoD's strategy to counter IEDs is based on three primary focus areas: (1) attack the network, (2) defeat the IED itself once emplaced and (3) train military forces in counter-IED (C-IED) techniques.

Focus Area 1 (attack the network) was designed to improve deployed units' success in disrupting the enemy's ability to fund, develop and emplace IEDs. This included the areas of: C-IED intelligence, weapons technical intelligence, persistent surveillance, reconnaissance, information operations, counter-bomber targeting, IED technical and forensic exploitation, and disposal of unexploded and captured ordnance.

In support of Focus Area 1, the C-IED Operations Integration Center (COIC) became mission-capable in 2007. The COIC continues to fulfill the original vision to break through stovepiped information sources, access national-level intelligence data, conduct analysis within a requesting organization's available time frame and push the best-

possible fused analysis to warfighters to enable them to attack IED networks. The COIC's architecture of partnerships now includes more than 20 intelligence agencies and other federal agencies that support the effort. One key COIC initiative includes a web-based multifeed, multitool, predictive and social-networking application that assists users in locating and confirming identities. Using this application, a person of interest could be located by specifying one or more search criteria such as name, address or civil affairs card information.

The forensic exploitation team was a proof-of-concept deployed to Baghdad in 2008 to provide the warfighter with enhanced weapons intelligence, forensic exploitation and information fusion capability. This effort supports targeting, interdiction and suppression of high-threat IED networks. It was integral to dismantling a number of explosively formed penetrator networks in Baghdad and helped end improvised rocket-assisted mortar attacks.

In addition, a C-IED reconnaissance kit of enhanced surveillance equipment provided snipers with an increased capability to visually detect the enemy emplacing IEDs.

Focus Area 2 (defeat the IED) includes initiatives to detect and neutralize IEDs at safe standoff ranges and to reduce the effects of IED detonation at the point of attack. Accomplishments have included systems that identify suspicious solids and liquids; new, vehicle-mounted IED detection systems; IED detection robots for combat patrols and logistics convoys; vehicle passive counterpassive infrared detonation devices; vehicle, manportable and fixed-site C-IED jamming systems; vehicle optics sensor systems; mechanical route-clearing devices; and funding for more combat tracker dogs.

In support of Focus Area 2, several programs and systems were developed such as an IED detection kit for Husky vehicles with a ground-penetrating radar system that could detect metallic and nonmetallic devices. This system identifies victim-operated IEDs before they deto-

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A C-IED team tries to keep the road safe for travel, probing carefully for unexploded bombs as it moves through a village in Logar Province.

nate. Based on the success of the operational assessment, DoD funded additional Husky mounted detection system kits for Afghanistan as well as in the training base.

Mounted and dismounted spiral improvements were developed and tested to enhance current electronic-warfare jamming systems. Improvements included combined vehicle radio jammers installed on mine resistant ambush protected (MRAP) vehicles and other legacy vehicles.

Task Force ODIN (observe, detect, identify and neutralize) is an Army aviation battalion created to conduct reconnaissance, surveillance, targeting and acquisition operations to combat insurgent operators of improvised explosive devices. The unit was formed at Fort Hood, Texas, and first deployed in October 2006. The unit focused its efforts in Iraq on winning back the roads, using aviation assets to maintain a persistent stare over areas at risk for IEDs. ODIN also employed the MQ-1C Warrior unmanned aerial vehicle (UAV). The extended-range multipurpose hybrid UAV had electro-optical/infrared sensors, a synthetic aperture radar, a laser rangefinder and a designator.

Focus Area 3 (train the force) includes predeployment C-IED training emphasizing the understanding of current enemy IED technical capabilities, tactics, techniques and procedures, and an increase in the realism of C-IED training across the services. The Joint Center of Excellence (JCoE)—the execution arm of JIEDDO's C-IED training program—ran the training program out of Fort Irwin, Calif., and emphasized more realistic training. Training expansions included construction of small village complexes, identifying and reporting homemade explosives, improved simulations training, home-station training, and the development of predeployment C-IED mobile assistance training teams.

Many organizations currently support Focus Area 3. The U.S. Marine Corps Training and Education Command, U.S. Joint Forces Command, U.S. Army Forces Command, and the combat training centers (CTCs) have all shared in raising training standards and IED awareness. Together with the four service-specific centers of excellence (CoEs), the JCoE provides deploying forces with training on rapidly fielded C-IED equipment and capabilities. The JCoE and the service CoEs facilitate individual, collective and unit C-IED training, and they develop and publish IED defeat tactics, techniques and procedures and make them available to deploying units.

In addition, C-IED mobile assistance training teams



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were developed to improve predeployment C-IED training for units that did not receive the CTC experience.

Another organization that is closing the gap between how forces train and how they fight is the Joint Training Counter-IED Operations Integration Center (JTCOIC). Created by JIEDDO and Training and Doctrine Command (TRADOC), JTCOIC uses technology to replicate today's complex operational environment and create training solutions for deploying forces. Its mobile training teams train units to use the COIC's sophisticated set of attack-the-network (AtN) applications to attack and defeat the networks that use IEDs. It also trains command staffs and analysts from all echelons on the utility of "reachback," assisting them with intelligence preparation for their future area of operations while at home station and during their mission-rehearsal exercises.

By combining today's operational data and modeling and simulations, the JTCOIC recreates significant IED and other combat events for use in individual and collective training. Three-dimensional visualizations, models and gaming scenarios associated with an event that occurred yesterday are in warfighters' hands in less than a week.

Mirroring its modeling and simulations success of using operational data to improve training, the JTCOIC's "Training Brain" replicates the depth of today's data environment to test soldiers' situational awareness, decision making and ability to effectively use AtN resources. It converts months of real-world intelligence and operations reports into a usable framework for scenario-based training at all levels. In practice, the data is bent so that entire networks can be overlaid onto terrain areas at the CTCs.

An additional area of success in reducing U.S. casualties is the use of MRAPs. Secretary of Defense Robert M. Gates has credited MRAPs with saving "thousands of lives" in Afghanistan and has pledged surplus vehicles to U.S. allies to help C-IED efforts there.

TRADOC and C-IED

TRADOC has the lead for the U.S. Army's effort in support of DoD's focus areas. The outcome is resource-informed, assessment-based decisions that support current operations and future requirements. The intended outcomes describe the strategy's ends, the Army's focus areas express its ways, and the integration of C-IED solutions into the Army by the focus-area leads provides the strategy's means. Two principles are essential to achieving success: synchronizing C-IED activities within the Army between the generating force and the operating force in support of Army force generation (ARFORGEN), and managing the creation of C-IED solutions through accelerated and deliberate development processes. Synchronizing C-IED capability development activities with ARFORGEN means providing tailored capability packages to specific Army units and allocating time for units to train with their new capabilities and integrate them into their daily activities. The Army will strive to rapidly deploy new materiel and nonmateriel C-IED solutions as part of incremental capability packages, with reception synchronized with ARFORGEN when practical.

Units receiving new capabilities will be provided with comprehensive individual, collective and staff instruction as necessary so that they understand how to operate or use each capability, how the capability interacts with their other capabilities and how using the capability can enhance their mission effectiveness. The Army Staff G-3/5/7 will decide which capabilities to provide to the Army through ARFORGEN and which to provide immediately to units already deployed.

The Way Ahead

Much work still lies ahead for the Army. It must accelerate the process of making C-IED training institutional; it is currently taught as contingency-based training and funded by overseas contingency operations dollars. Within the Army, TRADOC is working to standardize individual-level tasks and increase mission-focused C-IED training at home station and the CTCs. This effort will resolve existing shortcomings of required C-IED training skill levels—from soldiers in basic training to leaders attending professional military education.

Furthermore, lack of task standardization has resulted in varying compe-

tency levels from school to school. The plan is for C-IED training at all Army schools to support the collective tasks trained at unit home stations. C-IED tasks and desired outcomes will ultimately be "nested" throughout Army schools in support of the 2009 *Army Capstone Concept* and the 2010 *Army Operating Concept*. This training will also have to be periodically updated with significant trends to keep all skills effective and relevant.

TRADOC must work to make C-IED institutional and move the center of gravity of C-IED training away from ARFORGEN/reset activities further upstream to soldier and leader development. In the capability development arena, the Army must change the way it adapts organizational design and force structure to operationalize emerging technologies with faster speed within the program objective memorandum cycle. Changes and improvements in acquisition policies and procedures already in process should also continue at a rapid rate.

The IED has become the weapon of choice of our adversaries. This has resulted in a tremendous investment of time, effort and resources to mitigate the IED threat. JIEDDO remains engaged by leading, advocating and coordinating all actions to defeat IEDs. The Army continues to make significant inroads through increased fielding of C-IED capabilities and standardization of C-IED training. Although it is quite probable that IEDs will remain a threat in the foreseeable future, through initiatives, innovation and technology breakthroughs, the effects of IEDs may be minimized or neutralized entirely. The Army, along with its joint and combined partners, will continue to attack this threat in its present and future forms. ★

*A soldier from Joint Task Force
Paladin C-IED Team 15 responding
to an IED call detonates an antitank
mine he found in place on a main
road in Alozi, Logar Province.*



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